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Appeal Brief-Patents

FROM: Rebecca P. Rokos

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DATE: July 9, 2004

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TOTAL NO. OF PAGES: 15

OUR REFERENCE NO.: 006401.00029

RE: In re U.S. Patent Application of Antrim et al.
Application No. 09/614,961
Filed: July 13, 2000
For: REDUCED MALTO-OLIGOSACCHARIDES

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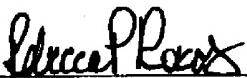
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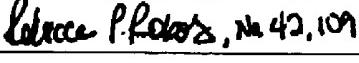
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TRANSMITTAL FORM		Application Number	09/614,961
		Filing Date	July 13, 2000
		First Named Inventor	Antrim et al.
		Group Art Unit	1623
		Examiner Name	Howard Owens, Jr.
Total Number of Pages in This Submission		Attorney Docket Number	
		006401.000029	

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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Allen E. Hoover, Reg. No. 37,354
Signature	
Date	July 9, 2004

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Effective 10/01/2003. Patent fees are subject to annual revision.

 Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 750)

Complete if Known

Application Number	09/614,961
Filing Date	July 13, 2000
First Named Inventor	Antrim et al.
Examiner Name	Howard Owens, Jr.
Art Unit	1623
Attorney Docket No.	006401.00029

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1. BASIC FILING FEE

Large Entity Small Entity

Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description	Fee Paid
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	285	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1)

(\$ 0)

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims	Independent Claims	Multiple Dependent	Extra Claims	Fee from below	Fee Paid
			0	X	0
			0	X	0

SUBTOTAL (2) (\$ 0)

** or number previously paid, if greater; For Reissues, see above

3. ADDITIONAL FEES

Large Entity Small Entity

Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description	Fee Paid
1202	18	2202	9	Claims in excess of 20	
1201	86	2201	43	Independent claims in excess of 3	
1203	290	2203	145	Multiple dependent claim, if not paid	
1204	86	2204	43	** Reissue independent claims over original patent	
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent	

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3)

(\$ 750)

SUBMITTED BY

Complete if applicable

Name (Print/type)	Allen E. Hoover	Registration No. (Attorney/Agent)	37,354	Telephone	312-463-5000
Signature	<i>Allen E. Hoover, No. 42109</i>			Date	July 9, 2004

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Antrim et al.

Serial No.: 09/614,961

No.:

Filed: July 13, 2000

For: REDUCED MALTO-
OLIGOSACCHARIDES

Atty. Docket 06401.00029
No.:

Group Art Unit: 1623

Examiner: Howard Owens,
Jr.

OFFICIAL

APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

This document constitutes the Appellants Brief on Appeal. The matters required by 37 CFR 1.192 are addressed in specific detail herein below.

Real Party in Interest

The real party in interest is Grain Processing Corporation, a corporation of Muscatine, Iowa. Grain Processing Corporation is the Assignee of the present application.

Related Appeals in interferences

None known.

Status of Claims

Claims 2-8, 10-14, 16-18, and 23-25 are pending in the present application. Claims 1, 9, 15, and 19-22 have been canceled. All of the pending claims stand as appealed.

Status of Amendments

No amendments were filed subsequent to final rejection.

Summary of Invention

As discussed, for instance, at page 4, line 28, a method for substantially reducing a mixture of a plurality of oligosaccharide species is provided. The species may differ at least in DP value (DP meaning degree of polymerization), thus defining a DP profile for the mixture. In the preferred embodiment of the invention, the method comprises the steps of providing the oligosaccharide mixture and catalytically hydrogenating the mixture under hydrogenation conditions suitable to substantially preserve the DP profile of the mixture.

Generally, the method of the invention comprises the step of catalytically hydrogenating the mixture under hydrogenation conditions suitable to substantially preserve the DP 1-8 profile of the mixture. The catalytic hydrogenation is performed at a pressure of at least about 1500 psi. In accordance with the invention as set forth in the three independent claims in this application, claims 23, 24, and 25, the plurality of malto-oligosaccharides comprises a maltodextrin. A maltodextrin, as is well known in the art, is a mixture of glucose and glucose oligomers in which the glucose oligomers are composed almost completely of α -1, 4-linked glucose units. Moreover, a maltodextrin has a dextrose equivalent value (prior to hydrogenation) of less than 20. See page 2, lines 12-16.

The Examiner has already allowed U.S. Patent 6,613,898, the parent of the present application.

Issues

Did the Examiner err in maintaining the Section 103 rejection over Borden, especially after this same Examiner allowed the claims of U.S. Patent 6,613,898 over Borden?

Given Borden's teachings of aggressive reaction conditions which would be certain to degrade the DP profile of a maltodextrin, how can the Examiner possibly maintain a Section 103 rejection of the present claims, which specify reaction conditions that preserve DP profile?

Grouping of Claims

Applicants request that the claims be considered as a single group. Applicants by no means are conceding that the claims do not reflect separately patentable differences from claim to claim, but submit the claims as a single group for purposes of simplifying the issues before the Board. It is suggested that the Board consider claim 23 as the basis of the appeal.

Argument

Applicants have already been awarded U.S. Patent 6,613,898 on the parent of the present application. The present application is a continuation-in-part. This application specifies certain conditions for the catalytic hydrogenation of a malto-oligosaccharide that are not claimed specifically in the '898 patent, specifically, catalytic hydrogenation at a pressure of at least 1500 psi. Claim 1 of the '898 patent is set forth below, along with claim 23 of the present application.

1. A method for reducing a mixture of a plurality of malto-oligosaccharide species to a dextrose equivalent (DE) of essentially zero, each of said malto-oligosaccharide species having a non zero DE resulting from the presence of a reducing end group on said malto-oligosaccharide species, said plurality of malto-oligosaccharide species differing at least in degree of polymerization (DP) value thus defining a DP profile for said mixture, at least about 40% of said malto-oligosaccharides in said mixture having a DP value greater than 10, said plurality of malto-oligosaccharides comprising a maltodextrin, said method comprising the steps of: providing said malto-oligosaccharide mixture; and catalytically hydrogenating said mixture under hydrogenation condition suitable to substantially preserve the DP 1-8 profile of said mixture.

23. A method for reducing a mixture of a plurality of malto-oligosaccharide species to a dextrose equivalent (DE) of essentially zero, each of said malto-oligosaccharide species having a non zero DE resulting from the presence of a reducing end group on said malto-oligosaccharide species, said plurality of malto-oligosaccharide species differing at least in degree of polymerization (DP) value thus defining a DP profile for said mixture, at least about 40% of said malto-oligosaccharides in said mixture having a DP value greater than 10, said plurality of malto-oligosaccharides comprising a maltodextrin, said method comprising the steps of:

providing said malto-oligosaccharide mixture; and
catalytically hydrogenating said mixture under
hydrogenation conditions suitable to substantially preserve
the DP 1-8 profile of said mixture, said catalytic hydrogenation
being performed of at least 1500 psi.

The Examiner has apparently withdrawn his contention that the polydextrose of Borden is a malto-oligosaccharide (and indeed the Examiner is correct to have withdrawn this assertion). In the Final Office Action, the Examiner states:

Borden teaches processing of polymaltose (col. 2, line 3-10) which is an α -1,4-linked polysaccharide, equivalent to the malto-oligosaccharides claimed by applicant.

Applicants respectfully disagree. In the present application, only maltodextrins are claimed. As has been previously established, maltodextrins are essentially linear α -1,4-linked glucose oligomers, although maltodextrins do contain a small amount of α -1,6-linked glucose units (up to about 3%).

In contrast the Borden reference characterizes polymaltose as a "highly branched" material. Further details concerning the polymaltose of Borden are found at column 2, line 33 *et seq.* Polymaltose is said to be a heat-polymerized glucose oligomer. Borden further teaches that "some of the thus-formed polydextrose or polymaltose polymer chains are terminated by reducing glucose groups while others may be terminated by polyol."

Simply put, the "highly branched" polymaltose of Borden is not a maltodextrin. Maltodextrins have a very small percentage of branch points, whereas polymaltose is "highly branched." Maltodextrin contains no polyol terminal group (until hydrogenated in accordance with the teachings of the invention), whereas Borden teaches that "polymaltose" is sometimes terminated with a polyol group.

Borden does recognize the desirability of hydrogenation of a polydextrose and a polymaltose product to reduce color. Indeed, the hydrogenation of sugars to sugar alcohols has long been known as a method for increasing stability of the sugar. Borden fails altogether to teach or suggest a maltodextrin, however, nor does Borden teach or suggest the preservation of the DP profile of a maltodextrin. Indeed, Borden teaches that all reducing glucose groups should be hydrogenated:

Alternatively and preferably it is believed that substantially all of the reducing glucose groups are reduced (i.e. converted) to sorbitol groups.

As the Examiner recognized earlier in examining the parent '898 patent, such reaction conditions sufficient to reduce substantially all of the terminal glucose groups would be expected to degrade and alter the DP profile of the starting material. Borden thus teaches away from the reaction conditions claimed in this application. Examiner Owens himself has already recognized all of the foregoing in connection with the examination of the '898 parent patent. During the prosecution of that patent, the Borden reference was cited, but this rejection was overcome once the applicants were able to demonstrate the failure of Borden to teach or suggest as maltodextrin, and the failure of Borden to teach or suggest reaction conditions that would be expected to substantially preserve the DP 1-8 profile of a maltodextrin during hydrogenation.

The Examiner's allowance of the '898 patent (now presumed valid) is inconsistent with his actions in this application. The Examiner does not comment on this inconsistency in the final rejection, nor in the subsequent Advisory Action. Nonetheless, the Office has already deemed claim 1 of the '898 patent to be patentable over Borden. It

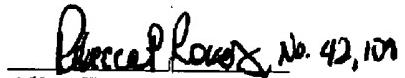
should likewise be the case that the amended claims of the present application are patentable over Borden.

In short, Borden does not teach or suggest a maltodextrin. Borden teaches away from hydrogenation conditions that would be expected to substantially preserve the DP 1-8 profile of a maltodextrin during hydrogenation. The Office has already ruled on this question in favor of the applicants. Applicants see no basis by which the rejection can be maintained, and accordingly the rejection should be reversed.

Appendix

A listing of the claims on appeal is presented in an appendix hereto.

Respectfully submitted,



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